REMARKS

Applicants thank the Examiner for the performance of a thorough search and note the reminder of the duty of disclosure under 37 CFR 1.56.

By this amendment, the paragraphs between lines 12-19 of page 1 and lines 14-16 of page 5 in the specification have been amended to correct the informalities. Claims 1-2, 7, 13-15, 20, and 26 have been amended. No claims have been added or cancelled. Hence, claims 1-26 are pending in the application.

FIG. 1 has also been amended to include the legend "Prior Art" to indicate that the generic hardware components shown therein were known prior to the present invention. It should be noted, however, that such components where never previously used to execute the novel techniques recited in the present claims, nor did they previously store instructions for doing so.

SUMMARY OF THE REJECTIONS

Claims 1-4, 13-17, and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by Gal et al., U.S. Patent No. 5,729,732 ("Gal"). Claims 5, 7, 12, 18, 20, and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal in view of Ogi, U.S. Patent No. 5,854,938 ("Ogi"). Claims 6 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal in view of Marks, U.S. Patent No. 5,748,844 ("Marks"). Claims 8, 10, 21, and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal and in view of Couch et al., U.S. Patent No. 6,604,096 ("Couch"). Claims 9, 11, 22, and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal, Ogi and further in view of Couch.

THE REJECTIONS BASED ON THE PRIOR ART

I.   Claims 1-4, 13-17, and 26

Claims 1-4, 13-17, and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by Gal. The rejection is respectfully traversed.

I.1.   Claims 1, 13-14, and 26

Gal does not anticipate or in any way render obvious the amended independent claims 1 and 14 because, among other things, Gal does not disclose or in any way suggest the expressly claimed limitation:

> "determining a range of each bucket ... based on a number of the distribution keys associated with said sampled set of data items that fall within said range."

The range (sub-interval) associated with each of the buckets in Gal are **not** determined by how many samples fall within it. Rather, the ranges of Gal buckets are determined by a completely different process, which includes (1) determining a minimum value (min) and maximum value (max) of all samples, and (2) dividing the [max, min] range into sub-intervals. (Gal, col. 3, lines 22-23) and (Gal, col. 3 line 46 to Gal, col. 4, line 39).

The Gal bucket range determination technique may result in a very skewed distribution, since it does not take into account the actual number of samples that fall in each of the sub-intervals. For example, Gal may have a set of samples where 99 values fall within the range [1,10] but one sample has the value 500. In this case, when Gal may establish five sub-intervals [1, 100], [101, 200], [201, 300], [301, 400], [401, 500]. If the sample set was representative, the [1,100] bucket will contain 99% of the values, and the other buckets will be sparse or completely empty. In contrast, by taking into account how many samples fall in to each of the ranges, the chances of producing such a skewed distribution are significantly reduced.

For at least the reasons set forth above, the amended independent claims 1 and 14 are

patentable over Gal. Because claims 13 and 26 depend directly on claims 1 and 14,

respectively, they are also patentable over Gal.

I.2.   Claims 2-4 and 15-17

Gal does not anticipate the amended independent claims 2 and 15, because Gal does not

disclose or in any way suggest, among other things:

> "selecting data items from ... each subset of a plurality of subsets of said
> particular set of data."

Gal teaches randomly sampling keys (Gal, col. 3, line 46) from a file. Because each key

is associated to one of the N records in a file (Gal, col. 3, lines 40-41), when a key is "sampled,"

its corresponding record, or data item, is selected. Unlike the invention recited in Claims 2-4

and 15-17, nowhere in Gal discusses dividing the N records into subsets of records and

selecting data items from **each** of the subsets.

For at least the reasons set forth above, the amended independent claims 2 and 15 are

patentable over Gal. Because claims 3-4 and claims 16-17 depend directly on claims 2 and 15,

they are also patentable over Gal.

II.   Claims 5, 7, 12, 18, 20, and 25

Claims 5, 7, 12, 18, 20, and 25 were rejected under 35 U.S.C. § 103(a) as being

unpatentable over Gal in view of Ogi. The rejection is respectfully traversed.

The Office Action recognizes Gal's failure to teach "processing the buckets with

plurality [of] processors concurrently operating in parallel to execute a task." (Office Action,

page 8) However, as shall be explained in greater detail hereafter, neither Gal and Ogi, taken

individually or in combination, teaches or suggests express claim limitations of Claims 5, 7, 12,

18, 20, and 25.

II.1.   Claims 7 and 20

Gal does not teach or suggest all the claim limitations of the amended independent

claims 7 and 20, because Gal does not disclose the claimed:

**randomly selecting durable storage units from said plurality of durable
storage units** and using the data items stored on said randomly selected durable
storage units as the sampled set of data items

With respect to this limitation, Gal does not mention anything about storage units.

Similarly, Ogi does not teach or suggest how data items are selected. Instead, Ogi focuses on "a

parallel processor apparatus, which enables a blocking work for assuring a bucket write/read

performance" (Ogi, Abstract).

For at least the reasons set forth above, the amended independent claims 7 and 20 are

patentable over Gal in view of Ogi.

II.2.   Claims 5, 12, 18, and 25

Because claims 5, 12, 18, and 25 depend either directly or indirectly on the amended

independent claims 1 and 14, for at least the same reasons set forth in Section I.1 above, Gal

fails to teach or suggest all the claim limitations of claims 5, 12, 18, and 25. Also, Ogi fails to

teach or suggest the claimed "determining a range of each bucket ... based on a number of the

distribution keys associated with said sampled set of data items that fall within said range."

(Present Application, claims 1 and 14) Instead, Ogi focuses on "a parallel processor apparatus,

which enables a blocking work for assuring a bucket write/read performance" (Ogi, Abstract).

For at least the reasons set forth above, claims 5, 12, 18, and 25 are patentable over Gal

in view of Ogi.

III.   Claims 6 and 19

Claims 6 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal

in view of Marks. The rejection is respectfully traversed.

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The Office Action recognizes Gal's failure to teach "selecting a distinct random seek for each subset of the plurality of subsets of said particular set of data." (Office Action, page 11) In addition, neither Gal and Marks, taken individually or in combination, teaches or in any way suggests other claim limitations of claims 6 and 19.

Because claims 6 and 19 depend directly on the amended independent claims 2 and 15, respectively, for at least the same reasons set forth in Section I.2 above, Gal fails to teach or suggest all the claim limitations of claims 6 and 19. Also, Marks fails to teach or suggest the claimed "selecting data items from ... each subset of a plurality of subsets of said particular set of data." (Present Application, claims 2 and 15) Instead, Marks focuses on a system "for computing an initial partition of a graph comprising nodes and the edges that connect the nodes" (Marks, Abstract).

For at least the reasons set forth above, claims 6 and 19 are patentable over Gal in view of Marks.

IV. Claims 8, 10, 21, and 23

Claims 8, 10, 21, and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal in view of Couch. The rejection is respectfully traversed.

The Office Action recognizes Gal's failure to teach "selecting a specified percentage of data items in said particular set of date." (Office Action, pages 13 and 14) In addition, neither Gal nor Couch, taken individually or in combination, teaches or in any way suggests other claim limitations of claims 8, 10, 21 and 23.

Because claims 8, 10, 21 and 23 depend either directly or indirectly on the amended independent claims 1 and 14, for at least the same reasons set forth in Section I.1 above, Gal fails to teach or suggest all the claim limitations of claims 8, 10, 21 and 23. Also, Couch fails to teach or suggest the claimed "determining a range of each bucket ... based on a number of

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the distribution keys associated with said sampled set of data items that fall within said range." (Present Application, claims 1 and 14) Instead, Couch focuses on an apparatus "for dynamically generating query explain data." (Couch, Abstract)

For at least the reasons set forth above, claims 8, 10, 21 and 23 are patentable over Gal in view of Couch.

V.   Claims 9, 11, 22, and 24

Claims 9, 11, 22, and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gal, Ogi, and further in view of Couch. The rejection is respectfully traversed, because the Office Action fails to factually support any *prima facie* conclusion of obviousness.

The Office Action recognizes the failure of the modification of Gal by Ogi to teach "selecting a specified percentage of the plurality of durable storage units that are storing said particular set of data." (Office Action, pages 15 and 16) In addition, neither Gal, Ogi, nor Couch, taken individually or in combination, teaches or in any way suggests other claim limitations of claims 9, 11, 22, and 24.

Because claims 9, 11, 22, and 24 depend either directly or indirectly on the amended independent claims 7 and 20, for at least the same reasons set forth in Section II.1 above, Gal and Ogi, either individually or in combination, fail to teach or suggest all the claim limitations of claims 9, 11, 22, and 24. Als/o, Couch fails to teach or suggest the claimed "selecting data - items" from a particular set of data that are "durably stored on a plurality of durable storage units." (Present Application, claims 7 and 20) Instead, Couch focuses on an apparatus "for dynamically generating query explain data." (Couch, Abstract)

For at least the reasons set forth above, claims 9, 11, 22, and 24 are patentable over Gal, Ogi, and further in view of Couch.

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SUMMARY

Therefore, for at least the reasons set forth above, it is respectfully submitted that the pending claims 1-26 are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP
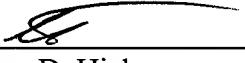
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Attachment: Replacement Sheet for Fig. 1